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11 transmission link, the plurality of interface modules  
12 being interconnected to each other by way of the  
13 communication network, the plurality of interface  
14 modules including first and second interface  
15 modules and a plurality of additional interface  
16 modules distributed throughout the vehicles, each of  
17 the plurality of interface modules being coupled to  
18 respective ones of the plurality of input devices and  
19 to the plurality of output devices by way of  
20 respective dedicated communication links, the  
21 plurality of interface modules cooperating to control  
22 the plurality of output devices based on input status  
23 information from the plurality of input devices;

24 (B) a chassis; and

25 (C) a variant module, the variant module being mounted on the  
26 chassis and the weight of the variant module being  
27 supported by the chassis, the variant module having at  
28 least one of the plurality of interface modules mounted  
29 thereon, the variant module including a mechanical drive  
30 device capable of imparting motion to solid or liquid matter  
31 that is not part of the vehicle to provide the vehicle with a  
32 first type of functionality, the variant module being  
33 removable and replaceable with other variant modules  
34 having other mechanical drive devices.

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1 ~~37~~ 37. A control method for an equipment service vehicle having a  
2 plurality of input devices, a plurality of output devices, and a plurality of  
3 interface microprocessor-based modules, the plurality of interface modules  
4 including first and second interface modules and a plurality of additional  
5 interface modules distributed throughout the vehicle, the plurality of interface  
6 modules being connected to each other by way of a communication network,  
7 and the plurality of interface modules being connected to respective ones of the  
8 plurality of input and output devices, the method comprising:

- 9 (A) storing I/O status information at each respective one of the  
 10 plurality of interface modules, including (1) storing I/O  
 11 status information acquired locally by the respective  
 12 interface module from a subset of the plurality of input  
 13 devices, the subset of the plurality of input devices being  
 14 connected to the respective interface module, and (2)  
 15 storing I/O status information received by way of the  
 16 communication network from remaining ones of the  
 17 plurality of interface modules;  
 18 (B) processing the I/O status information at each respective  
 19 one of the plurality of interface modules to determine  
 20 desired output states for a subset of the plurality of output  
 21 devices, the subset of the plurality of output devices being  
 22 connected to the respective interface module; and  
 23 (C) controlling the plurality of output devices in accordance  
 24 with the desired output states using the plurality of  
 25 interface modules; and  
 26 wherein each of the plurality of interface modules stores I/O  
 27 status information for substantially all of the plurality of  
 28 input devices and substantially all of the plurality of output  
 29 devices, including the input devices and output devices  
 30 that are connected to other interface modules.

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 32. A method according to claim 37, wherein substantially all of the  
 2 desired output states are determined entirely locally at the respective interface  
 3 modules to which the output devices are connected based on the I/O status  
 4 information acquired locally and/or based on the I/O status information received  
 5 by way of the communication network.

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 39. A method according to claim 37, wherein the I/O status  
 2 information stored in each of the plurality of interface modules, including the I/O  
 3 status information received from the remaining ones of the plurality of interface  
 4 modules, is dynamically updated in real-time.

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A control method for an equipment service vehicle having a plurality of input devices, a plurality of output devices, and a plurality of interface microprocessor-based modules, the plurality of interface modules including first and second interface modules and a plurality of additional interface modules distributed throughout the vehicle, the plurality of interface modules being connected to each other by way of a communication network, and the plurality of interface modules being connected to respective ones of the plurality of input and output devices and being, the method comprising:

(A) storing I/O status information at each respective one of the plurality of interface modules, including (1) storing I/O status information acquired locally by the respective interface module from a subset of the plurality of input devices, the subset of the plurality of input devices being connected to the respective interface module, and (2) storing I/O status information received by way of the communication network from at least some remaining ones of the plurality of interface modules;

(B) processing the I/O status information at each respective one of the plurality of interface modules to determine desired output states for a subset of the plurality of output devices, the subset of the plurality of output devices being connected to the respective interface module; and

(C) controlling the plurality of output devices in accordance with the desired output states using the plurality of interface modules; and

wherein substantially all of the desired output states are determined entirely locally at the respective interface module to which the output devices are connected based on the I/O status information acquired locally and/or based on the I/O status information received by way of the communication network.

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